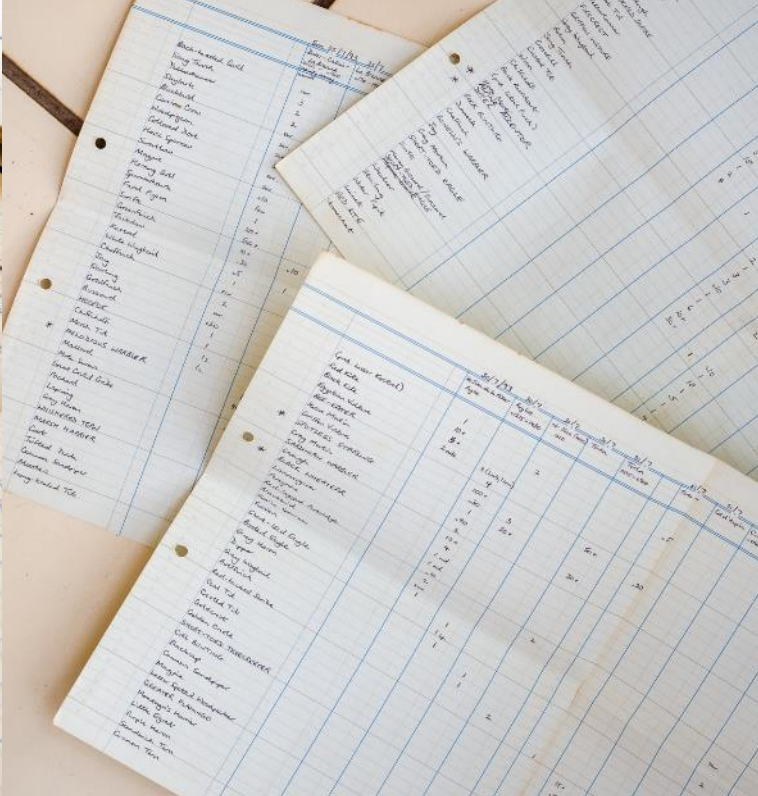
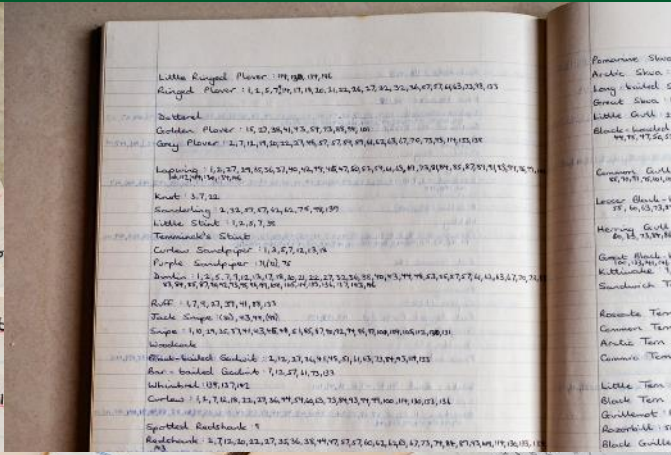


# “Bigger and Better” Improving Biological Data Flow

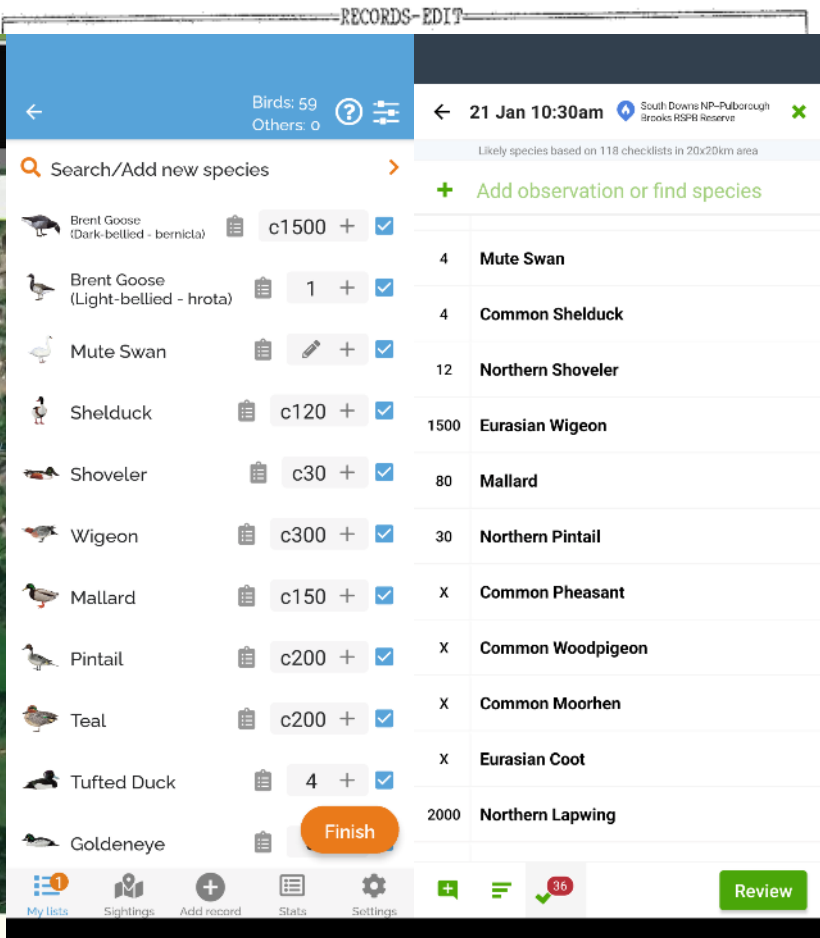
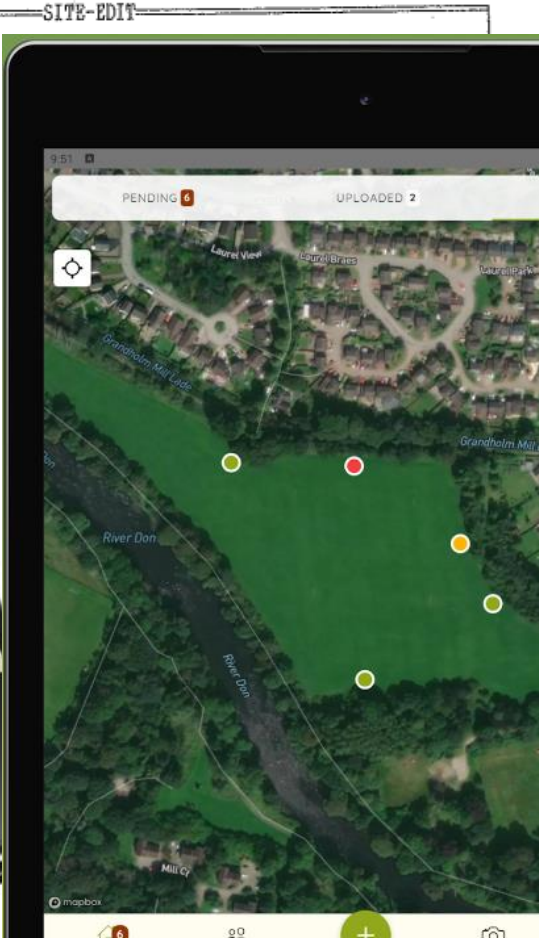
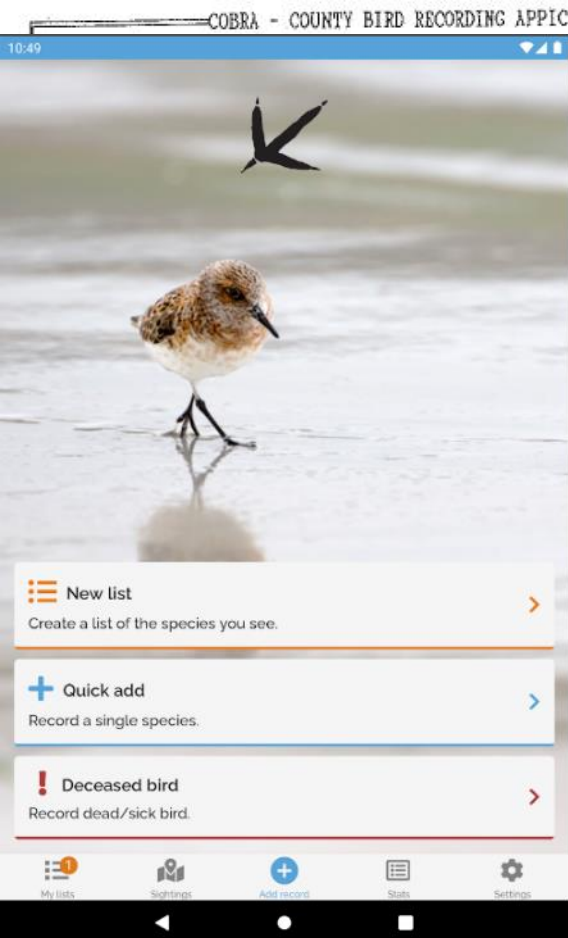
Mike Prince

[michael.prince@naturalengland.org.uk](mailto:michael.prince@naturalengland.org.uk)

# About Me



# About Me



Species	Date	Location	Count	Notes
27 Black-and-white Noddy				
28 Firecrest				
29 Little Bunting				
30 Little Egret				
31 Rustic Bunting				
32 Jack Snipe				
33 Hoopoe				
34 Snow Bunting				
35 Buff-bellied Pipit				
36 Firecrest				
37 Yellow-browed Warbler				
38 American Black Duck				
39 Firecrest	26/10/1936	St Mary's	8	
40 Jack Snipe	26/10/1936	St Mary's	1	
41 Yellow-browed Warbler	26/10/1936	St Mary's	2	
42 Little Bustard	26/10/1936	The Leard	1	310
43 Hen Harrier	17/11/1936	Isle of Sheppey	1	2 male
44 Little Owl	17/11/1936	Isle of Sheppey	1	1 Ringtail, Harry Ferry
				1 Saver's Court

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
40 POCHARD												
41 TUFTED DUCK												
42 SCALP												
43 EIDER												
44 LONG-TAILED DUCK												
45 COMMON SCOTER	15	236	5	122	47							



## Welcome

Log Out

## Your options

### Home

- Add records
- My records
- My places
- My preferences
- Management
- Upload records
- Explore data
- Notifications
- Help
- Contact us

## BirdTrack Partners



## Activity Feed

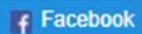
03/12/2018 - [redacted], Woodbridge

### Casual list

9 bird species seen, including Collared Dove (13), House Sparrow, and Starling (50)



Tweet



Facebook

Added 14 hours ago



01/12/2018 - [redacted], Woodbridge

### Casual list

9 bird species seen, including Collared Dove, House Sparrow, and Starling



Tweet



Facebook

Added 14 hours ago



30/11/2018 - Brussels

### Casual list

8 bird species seen, including Ring-necked Parakeet, Feral Pigeon, and Kestrel

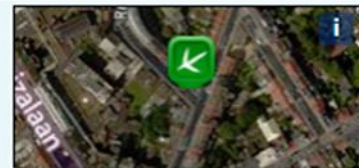


Tweet



Facebook

Added 3 days ago



less

more

## Recent Sightings



## My lists/species

Species

Lists

Species this month: 12  
Species this year: 226



## High scores

Complete lists this month

1.	[redacted]	26
2.	[redacted]	22
3.	[redacted]	13
3.	[redacted]	13
5.	[redacted]	12

Species recorded this year

1.	[redacted]	318
2.	[redacted]	286
2.	[redacted]	286
4.	[redacted]	272
5.	[redacted]	270
44.	[redacted]	226

## Calendar

< December 2018 >



## HIGHLIGHTS *from the* REPORT

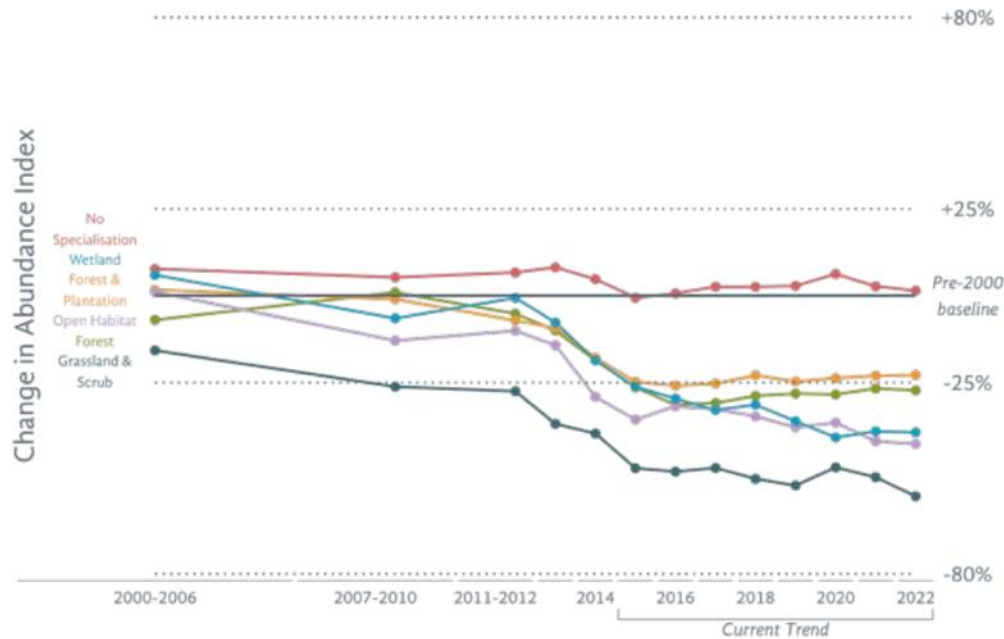
**942** Indian birds assessed for conservation priority

**217** species stable or increasing in the last eight years

**14** species, including Indian Roller, recommended for IUCN Red List reassessment

**178** classified as High Conservation Priority

**30,000+** birdwatchers contributed 30 million observations analysed for trends and distribution



# BUBO Listing and Pan-species Listing



mike@bubo.org

.....

Log in

Forgot login? Sign up

- View Lists
- Checklists
- Forum
- News
- Instructions
- About BUBO

mike@bubo.org

.....

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- Checklist
- Forum
- PSL News
- Instructions
- About PSL

## Latest Update



Pallas's Grasshopper Warbler

Pallas's Grasshopper Warbler *Helopsaltes certhiola* added to [Ian Kennedy's World life list \(IOC\)](#).  
273 species

BUBO Listing is the fun way to record, share and track your location worldwide using the most accurate location data available.

Just choose the location you want to keep track of and whenever you get a tick! Enjoy some friendly competition, add your year list for your local patch, get your friends to compare how everyone is doing with a BUBO Listing.

Read more [about BUBO Listing](#), or just register your own lists...



## Latest Update



© Raymond McNeil

Annulohyphoxylon cohaerens/ Hypoxyle coherens

*Annulohyphoxylon cohaerens* added to [Simon Van Toller's Britain, Ireland, Isle of Man & Channel Islands life list](#).  
5 Mar 2024. 5,043 species

## Britain, Ireland, Isle of Man & Channel Islands Life List



Rank	Lister
1	Mark Sutton
2	Pete Davis
3	Steve Nuttall
4	Julian Thomas
4	Mike Edgcombe

## Listing Milestones

Simon Van Toller added *Cistella acuum* to reach 350 species for Fungi.  
Wednesday 06 March 2024 07:31

David Cousins added *Draparnaud's Glass Snail Oxychilus (Oxychilus) draparnaudi* to reach 10 species for Molluscs.  
Tuesday 05 March 2024 23:18

Duerden Cormack added *Cylindroiulus*

## Britain, Ireland, Isle of Man & Channel Islands Life List

235 lists

Rank	Lister	Total	Recent Tick
1	Jonty Denton	12,969	<i>Electra pilosa</i>
2	Mark Telfer	9,120	<i>Robertus arundineti</i>
3	Graeme Lyons	8,858	<i>Anasaitis milesae</i>
4	Stephen Plummer	8,257	<i>Pristiphora appendiculata</i>
5	Steve Lane	8,109	<i>Psora decipiens</i>
6	Andy Brown	7,725	Purple Moor-grass <i>Molinia caerulea</i>
7	Tony Davis	7,466	<i>Banksia conspurcatella</i>
8	Andy Musgrove	7,378	<i>Macrargus rufus</i>
9	Julian Small	7,267	<i>Allodiopsis rustica</i>
10	Kevin Rylands	7,123	Abraham-Isaac-Jacob <i>Trachystemon orientalis</i>
11	Seth Gibson	6,873	Ostrich-plume Feather-moss <i>Ptilium crista-castrensis</i>
12	William Bishop	6,666	Lesser Glory-of-the-snow <i>Scilla sardensis</i>
13	John Martin	6,293	<i>Pristiphora luteipes</i>
14	Sam Thomas	6,221	<i>Phthitia longisetosa</i>
15	Sarah Patton	5,418	<i>Xiphidria prolongata</i>
16	Sally Luker	5,195	<i>Simacauda dicommatias</i>

## Latest News

- About Pan-species Listing
- Birds and your Pan-species Lists
- Pan-species Listing

## Statistics

398 lists    323 listers    25,222 species



Little Owl...Derbyshire

## Forum

['Missing' vascular plants](#)

## Trending Lists

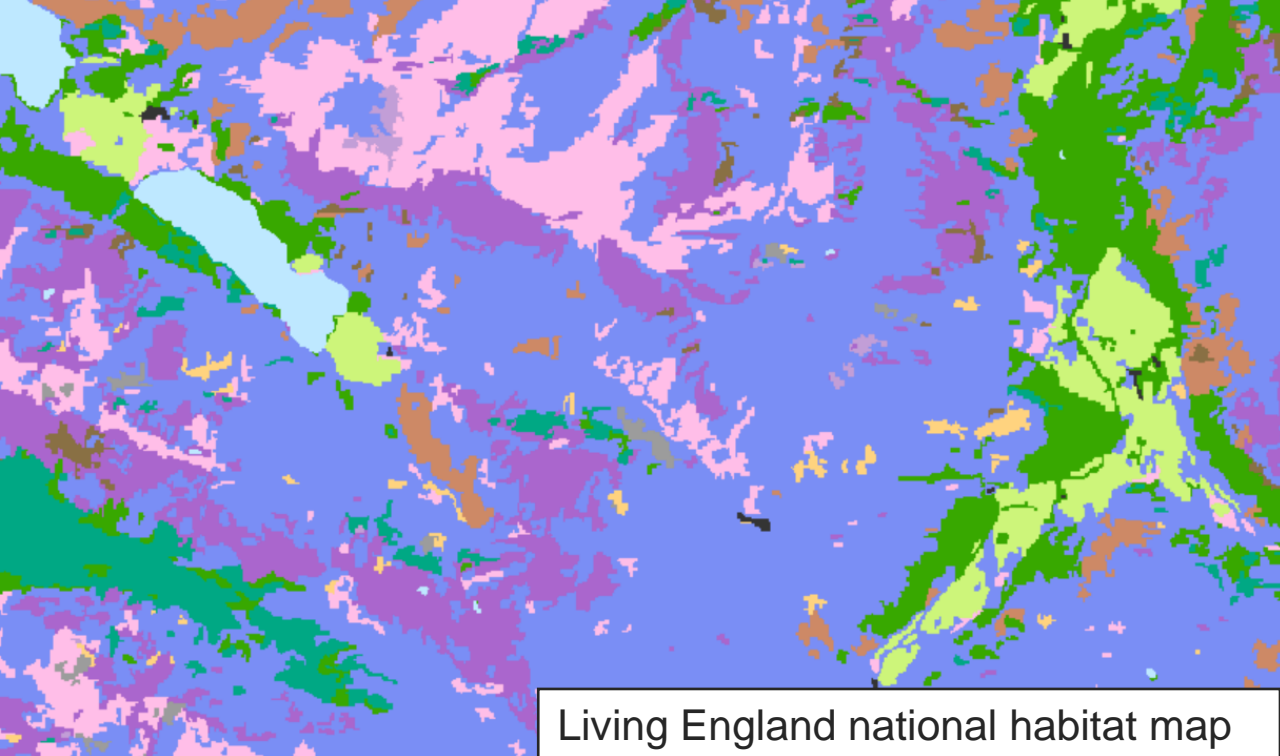
- Britain Year List 2024 BOU
- Britain, Ireland, Isle of Man & Channel Islands (PSL) Life List PSL
- World Life List IOC
- Britain Life List BOU

# Natural Capital and Ecosystem Assessment programme

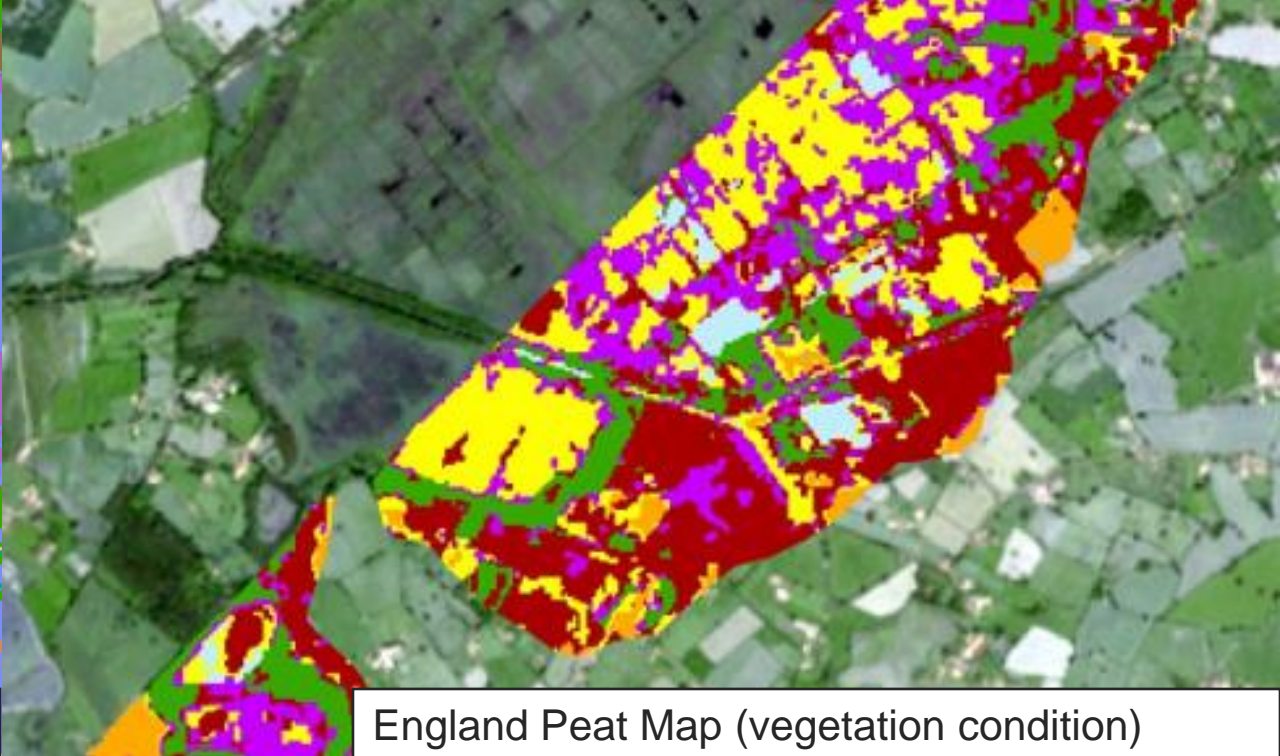


- A comprehensive baseline assessment of our environmental assets and ecosystems
- Long-term coordinated monitoring to supplement existing data and fill gaps in our evidence base
- A transformed infrastructure for collecting and sharing environmental data
- Policy-relevant, accessible outputs

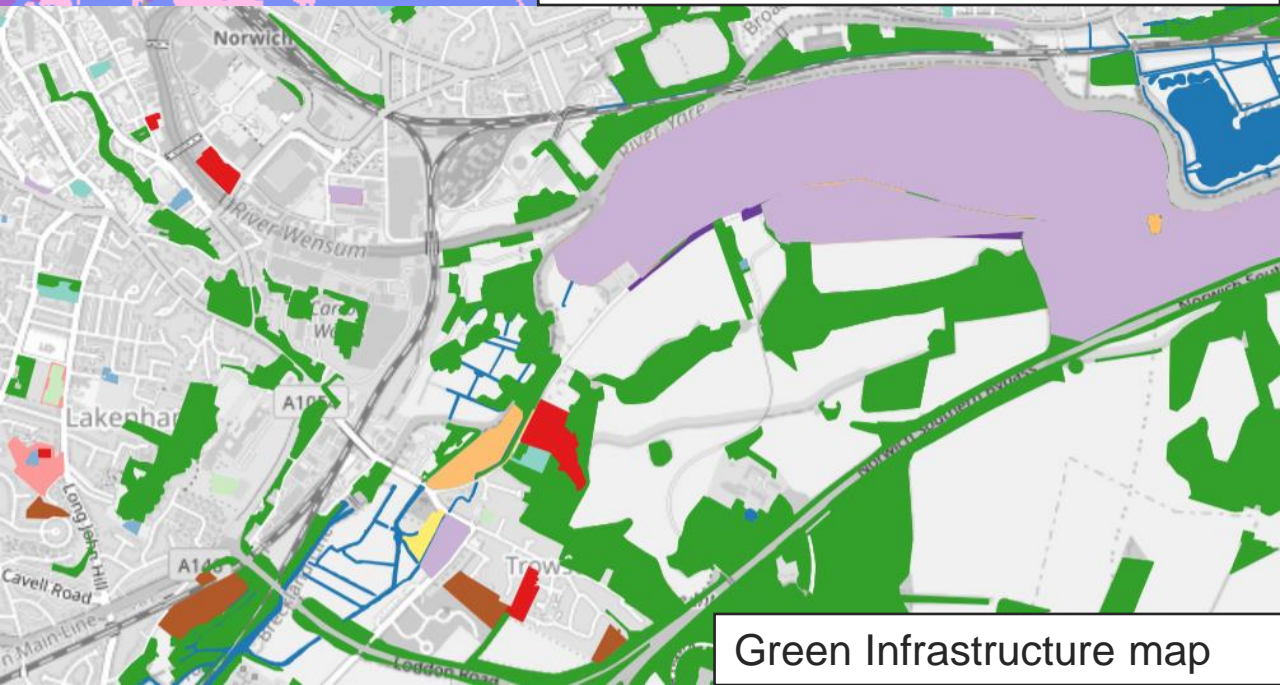




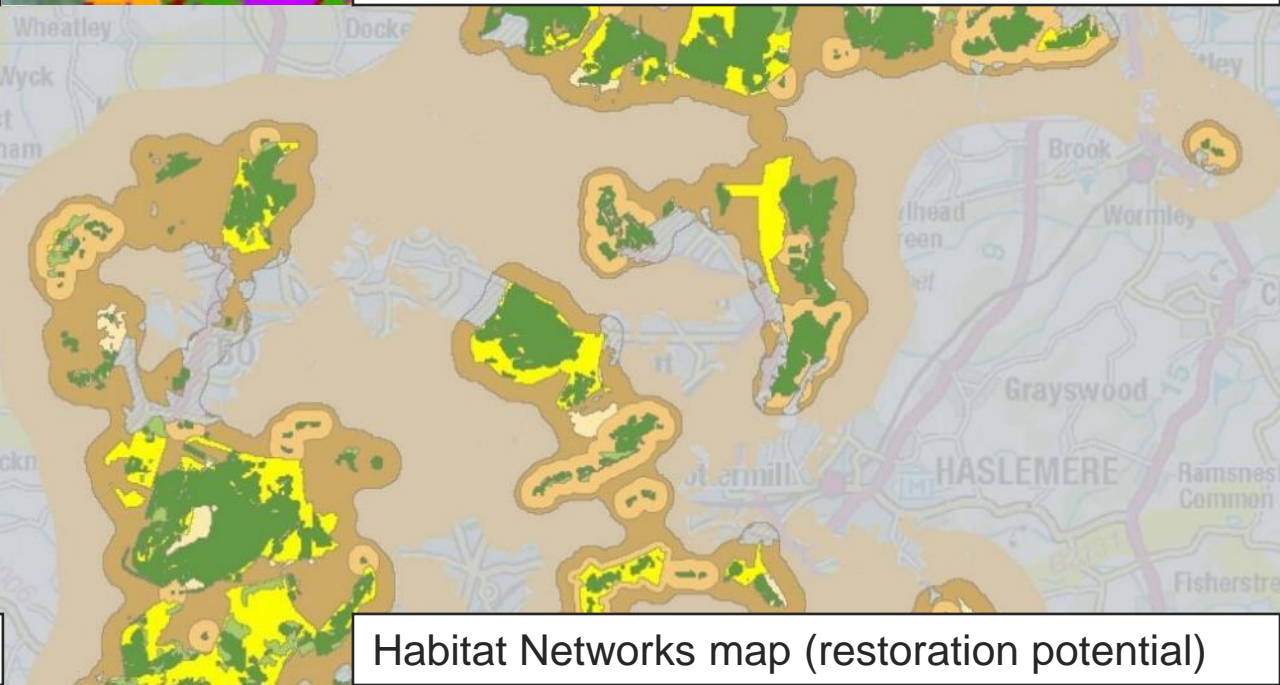
Living England national habitat map



England Peat Map (vegetation condition)



Green Infrastructure map



Habitat Networks map (restoration potential)



# Biological Data Flow

Overall, in the current situation resources are in play at the local level and within schemes; little is centralised or nationalised so efficiency is minimised but local value is maximised.

Currently, users need to go to multiple data providers (including recorders, LERCs, schemes, organisations, groups, social media, etc) to ascertain and access all possible sources of data

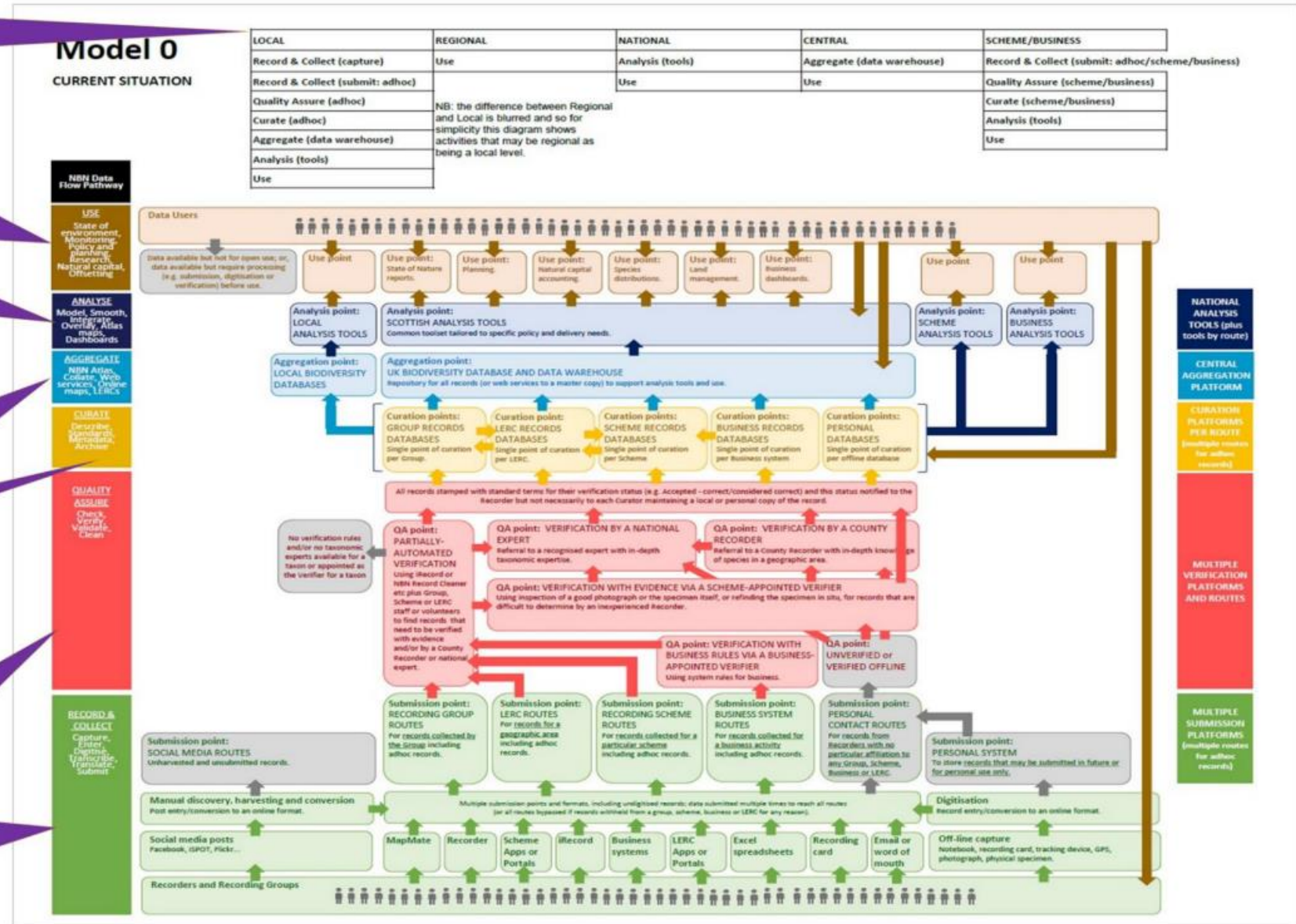
Currently, analysis tools are shaped by national government or LERC service user needs; schemes and organisations also provide analytical tools.

Currently, the NBN Atlas is the primary aggregation point for the UK but there are others which also aggregate (potentially a different version of) records for local and regional use.

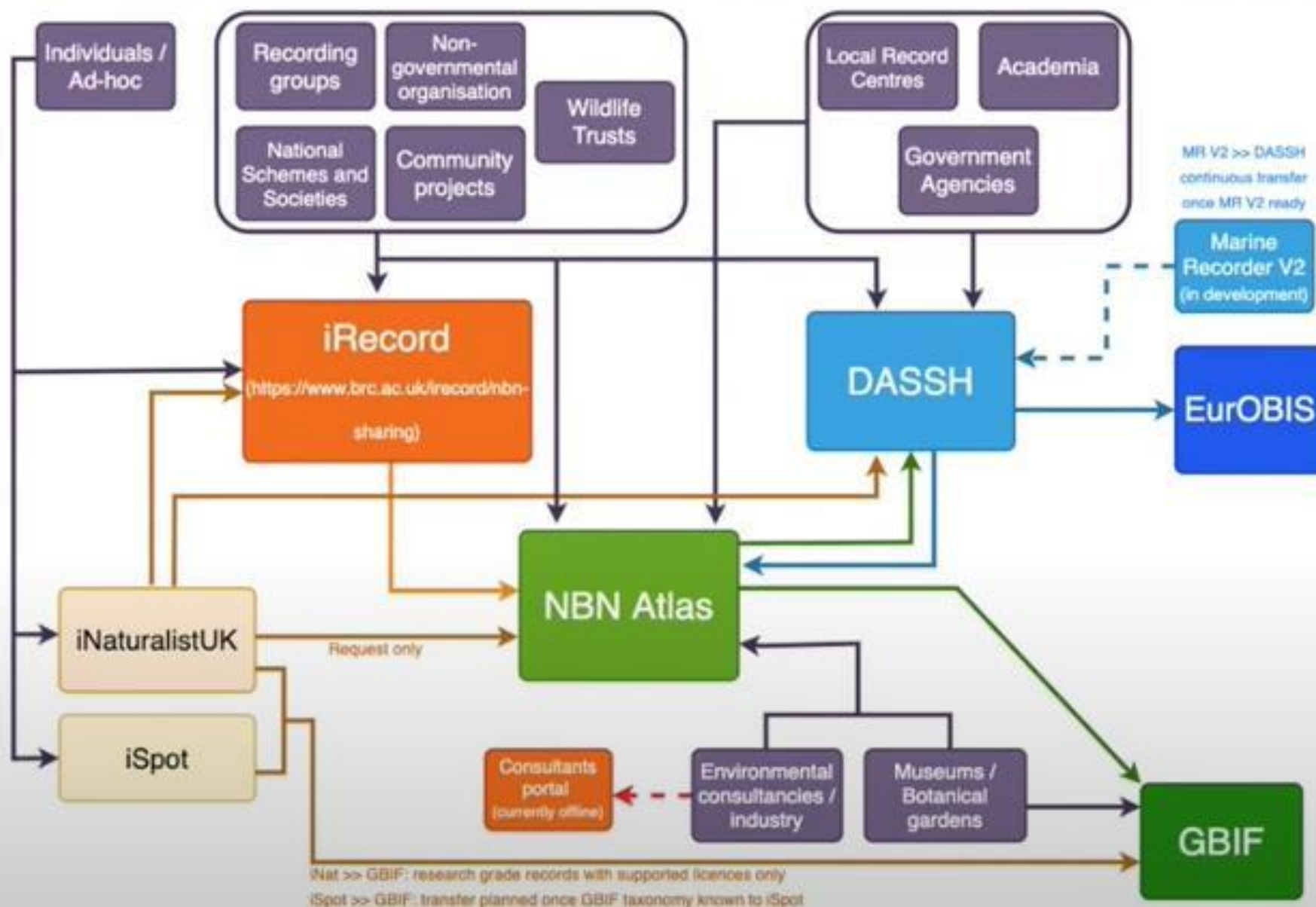
Currently, records may be held by more than one curator and/or in databases that aren't openly available. There is effort involved in exchanging records between curators and aggregation points.

This is a generalised view of verification; there are bottlenecks and verification rules may not be comprehensive or current. It can be hard to contact recorders as there is no register of contact details nor contact made.

Currently, lots of different formats are welcomed whether on or offline; social media posts require manual 'harvesting'. Recorders may submit a record multiple times to ensure it reaches all curators or users.



# Biological Data Flow



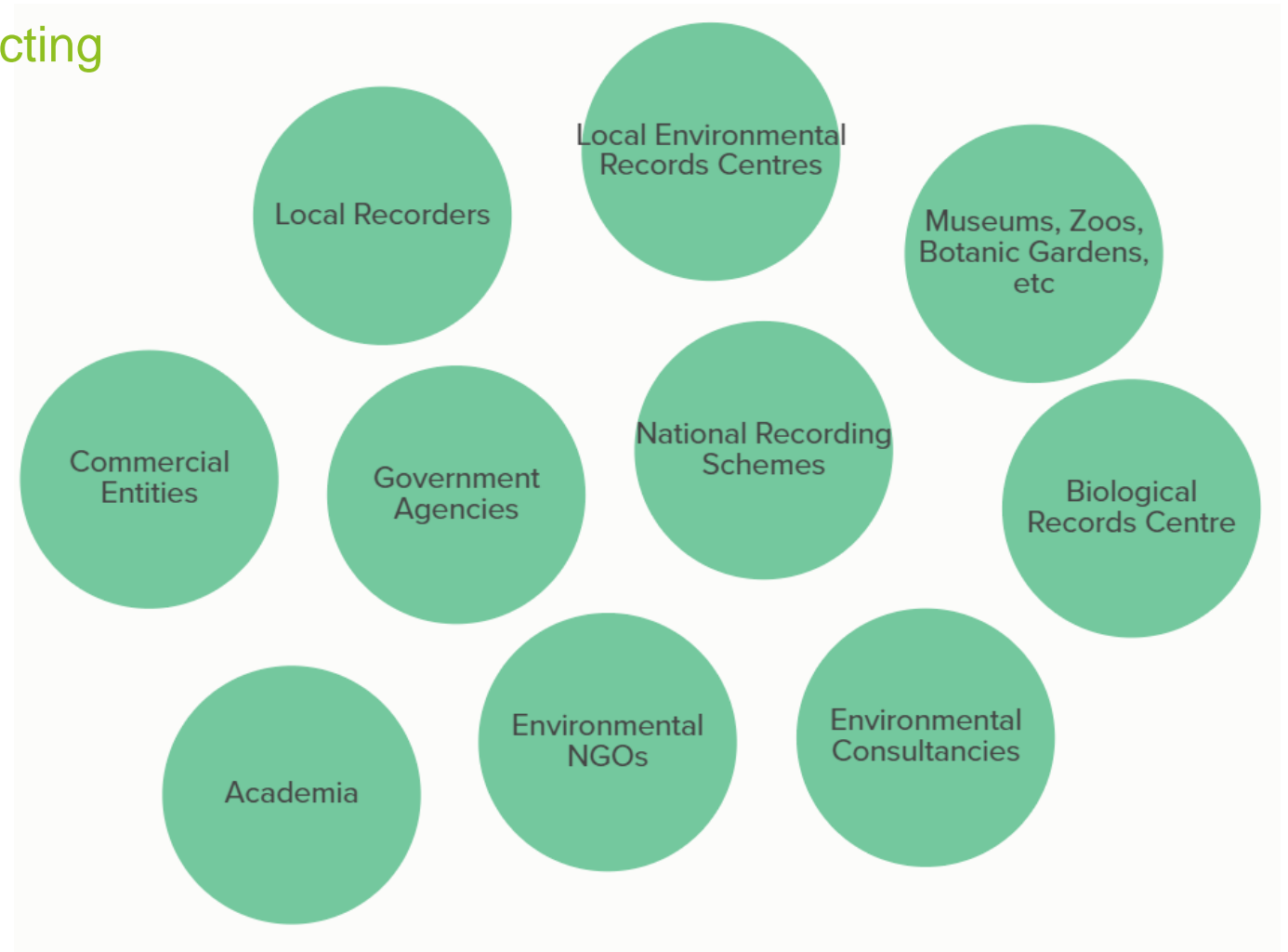
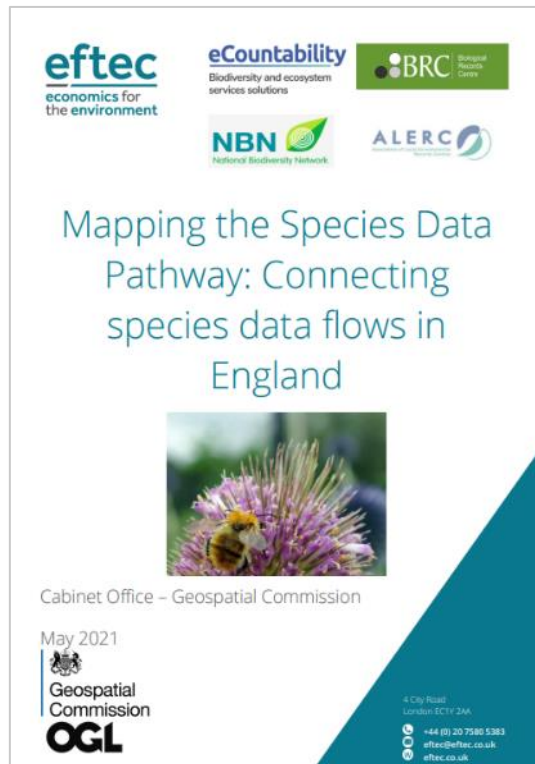


# Biological Data Flow



# Organisations Collecting Species Data

Numerous, diverse organisations collecting and storing species data



# Human observation of *Tephroseris palustris subsp. congesta* (R. Br.) Holub recorded on 1662

[Back to search results](#)
[Flag an issue](#)
[Contact data provider](#)
[Compare "original vs processed" values](#)

Licence: [OGL](#)

Date loaded: 2023-01-10

Date last processed: 2023-04-14



## Overview

Occurrence ID	LC0002150000G6X5
Basis of record	Human observation
Scientific name	<i>Tephroseris palustris subsp. congesta</i> (R. Br.) Holub
Licence	OGL
Record Date	1662 (Year)
Location	Grid Reference: SS78 Latitude: 51
Recorded by	John Ray
Identified by	John Ray
Identification verification status	Unconfirmed - plausible
Occurrence vitality	Alive

## Dataset

Data partner	South East Wales Biodiversity Rec
Data resource	NRW Regional Data: South East W



Marsh Fleabane © Alex Prendergast

**Why were major insect groups such as wasps and bees excluded from 2022 red list?**

the species groups that were included were ones where we have “good evidence”

**How would the absence affect the UK’s [statutory] biodiversity targets?**

the indicators would “not be sensitive to those species”

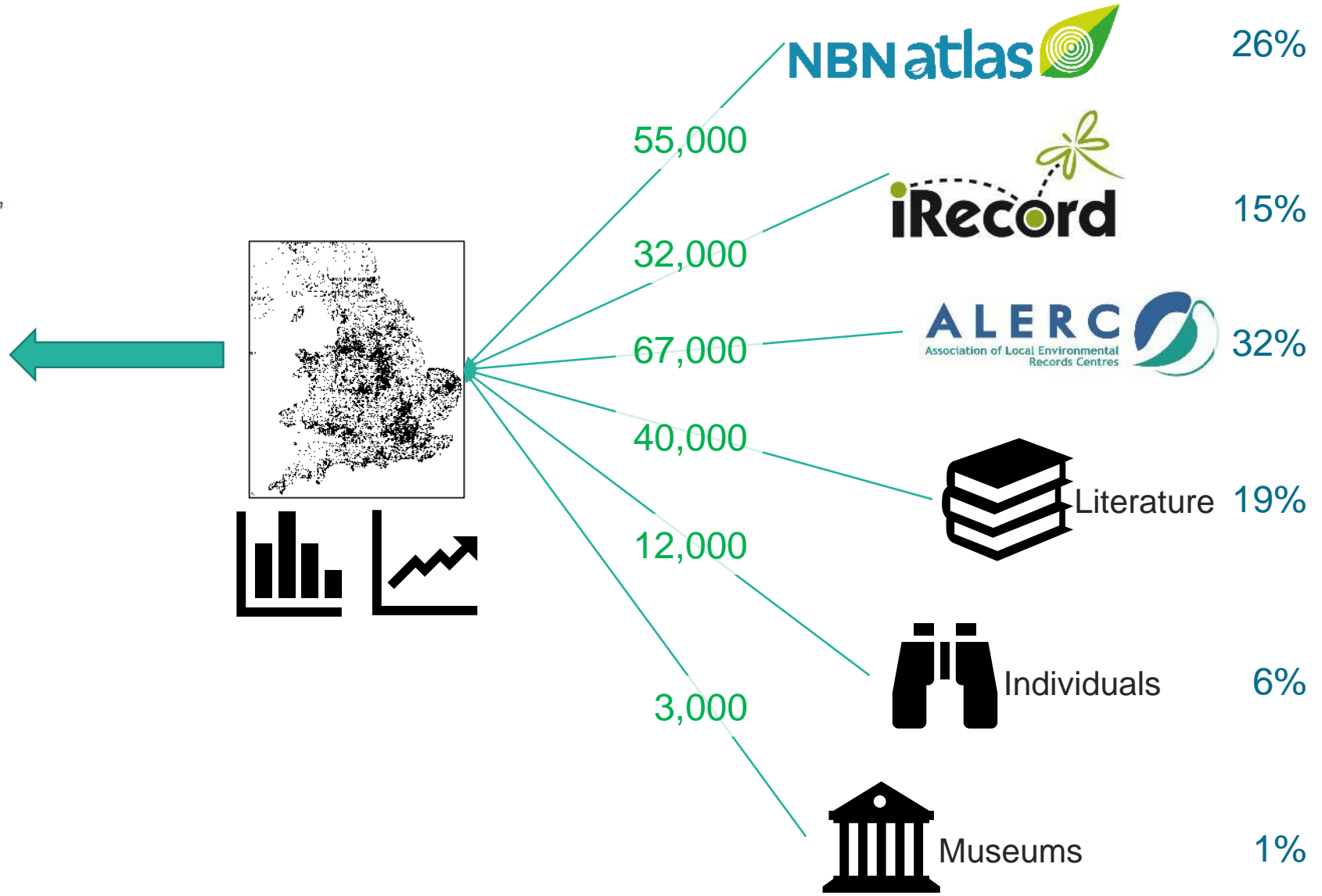
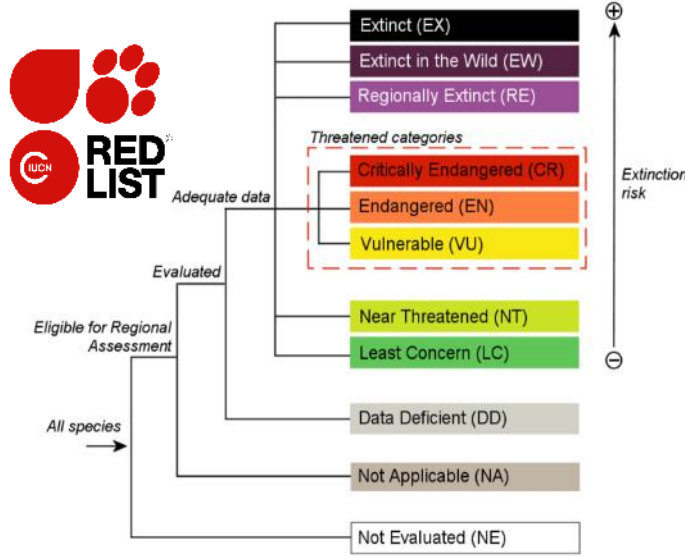
**How good is our information base on insects?**

“relatively low”

**How do we get better information? Is there anything Natural England can do?**

“maintaining and investing in partnerships”

# Data for Red List Assessments



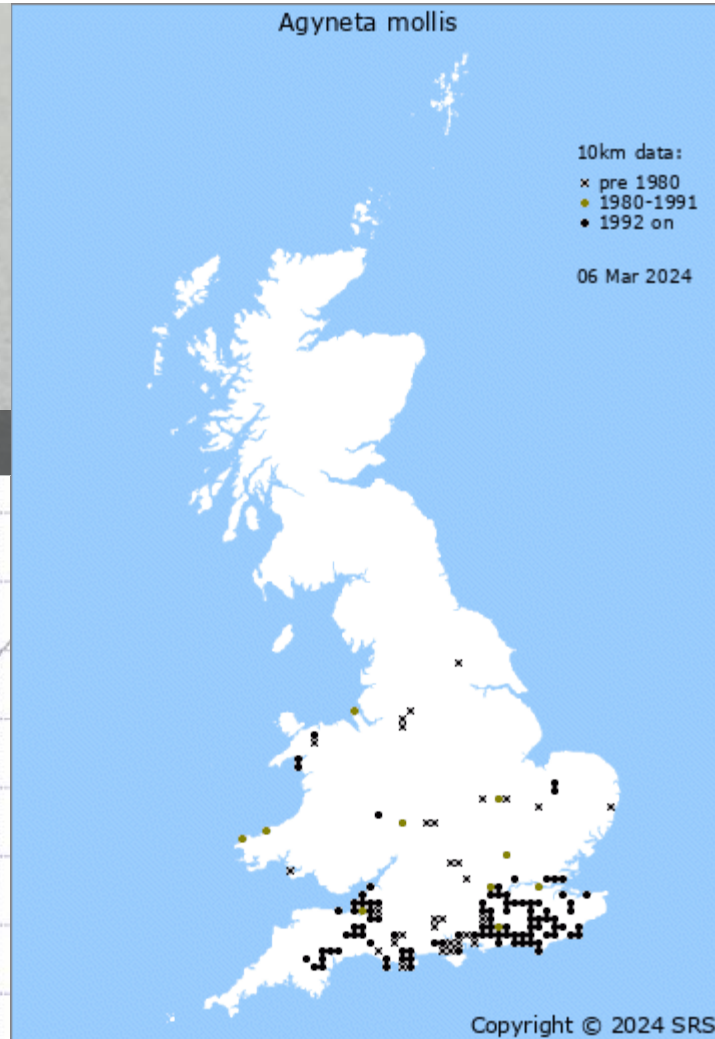
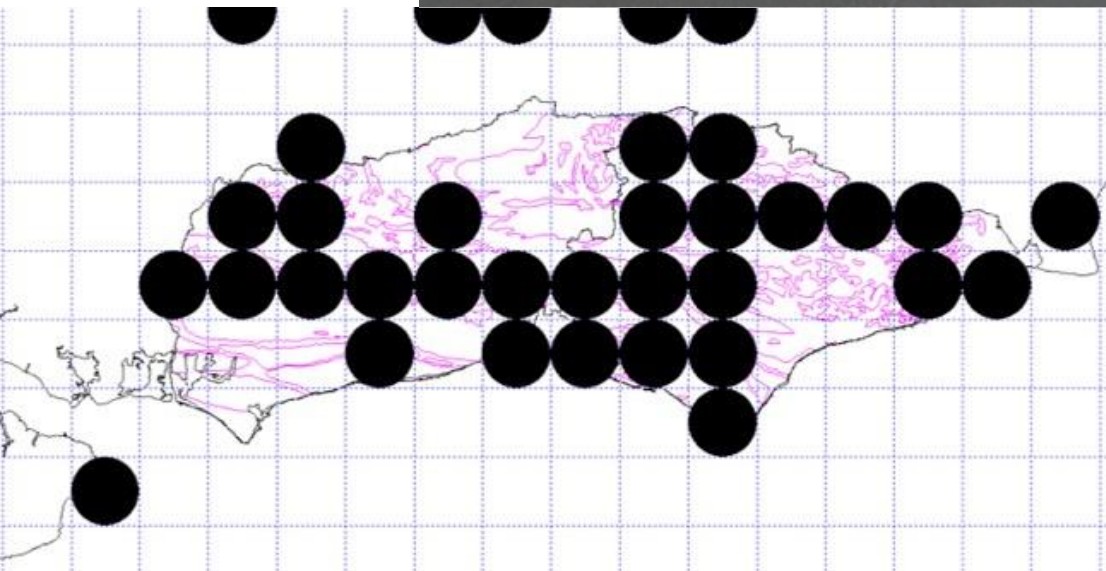


# GB Rarity Status

- **Nationally Rare:** recorded from between 1-15 hectads in Great Britain
- **Nationally Scarce:** 16-65 hectads



*Agyneta mollis* © Tylan Berry



*“I don’t submit records anywhere near as much as I could because I am unsure what will happen to them”*

*“I sent records to [my local] Bird Club for 8 years before realising it just all goes behind a paywall to the LERC”*

- Data Sharing

- “One of the benefits of iRecord over written records and some other computerised recording systems is in relation to where your records go after you submit them”
- “Local environmental records centres (LERCs) have instant access to records”
- “Verified records from iRecord may be shared via the NBN Atlas. The decision to do so lies with individual national recording schemes”

- Verification

- “Only expert verified records can be used as evidence in planning enquiries, species atlases etc. That doesn’t mean a record that cannot be verified is not useful”

# Data Flow: NBN Atlas

The NBN Atlas is the UK's largest repository of publicly available biodiversity data

**254,150,199**  
Occurrences

**50,881**  
Species

**1,072**  
Datasets

**178**  
Data partners

## MAKING THE MOST OF BIODIVERSITY DATA

Biodiversity data about plants, animals and fungi and their habitats may be used to educate and inform and in environmental decision-making, state of the environment assessments and restoration and rewilding.

**718,225**  
Ray-finned fishes

**1,326,890**  
Basidiomycota

**2,387,708**  
Dragonflies

**79,429,267**  
Perching birds

**3,003,536**  
Beetles

**804,143**  
Nightjars and owls

**1,631,037**  
True flies

NBN ATLAS JOB VACANCIES

Want to work with us on the NBN Atlas?

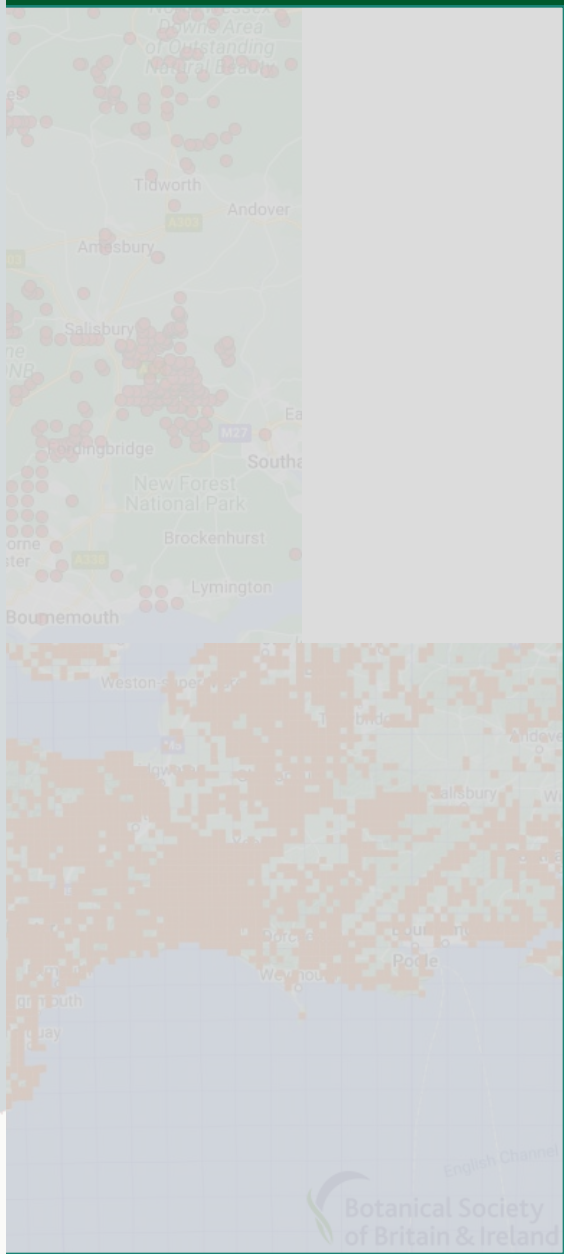
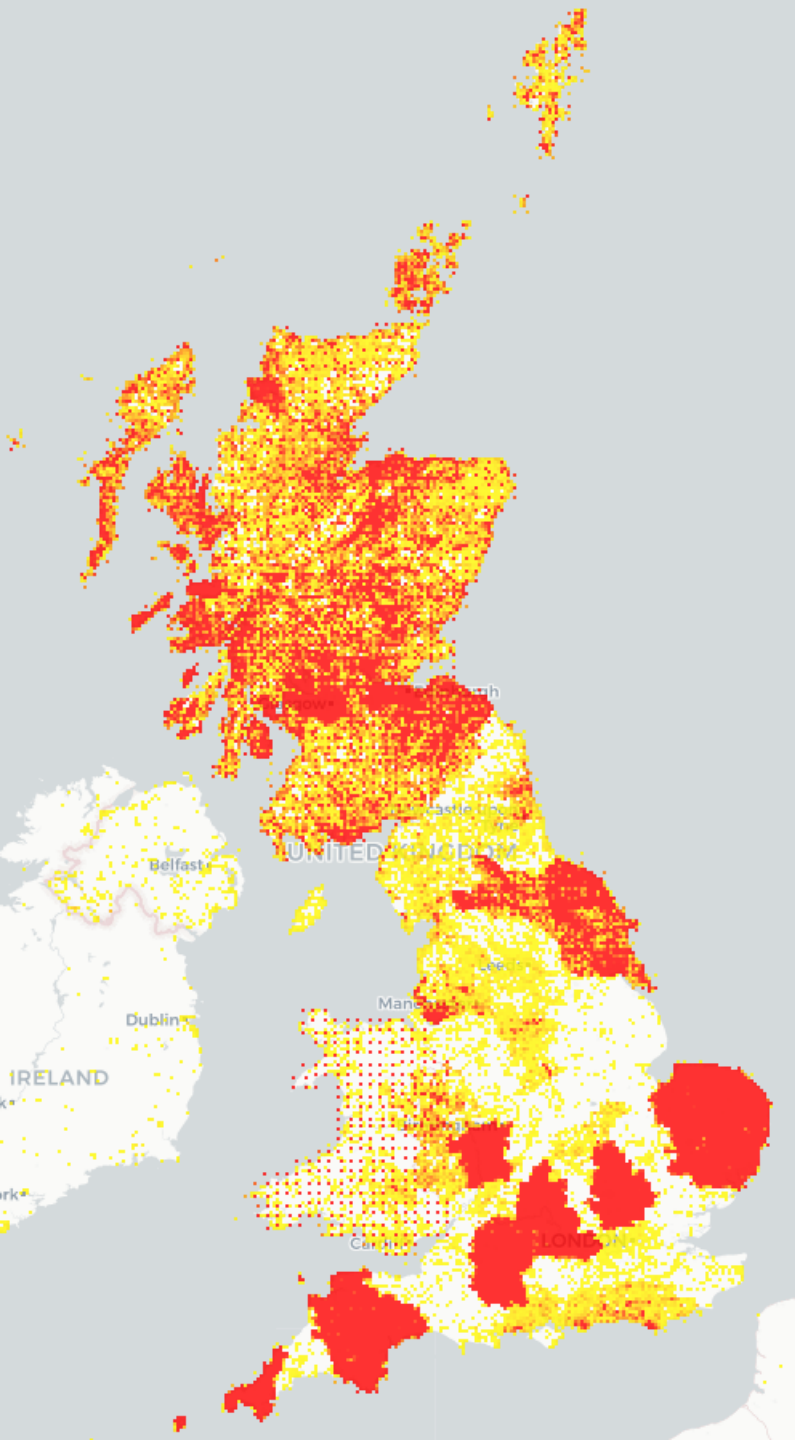


SHARE DATA

Record wildlife and share data



# Data Flow: NBN Atlas



# Data Flow: iRecord to NBN Atlas



- How long does it take records to reach the NBN Atlas?
- How much does verification interfere with data flow?
- What differences are there with data flow for different taxa groups?

Date	Location	Grid Reference	English Name	Scientific Name	Notes	Taxon Group	TVK	Recorder Name
20/06/2023	Shotesham--Tendaba	TM244994	<b>White Dead-nettle</b>	<i>Lamium album</i>		flowering plant	NBNSYS0000004244	Mike Prince
20/06/2023	Shotesham--Tendaba	TM244994	<b>16-spot Ladybird</b>	<i>Tytthaspis sedecimpunctata</i>	larva	insect - beetle (Coleoptera)	NBNSYS0000008318	Mike Prince
20/06/2023	Shotesham--Tendaba	TM244994	<b>Buff-tailed Bumblebee</b>	<i>Bombus terrestris</i>		insect - hymenopteran	NHMSYS0000875595	Mike Prince
20/06/2023	Shotesham--Tendaba	TM244994	<b>Elm</b>	<i>Ulmus</i>		flowering plant	NHMSYS0000464698	Mike Prince
20/06/2023	Shotesham--Tendaba	TM244994	<b>Common Earwig</b>	<i>Forficula auricularia</i>	nymph	insect - earwig (Dermaptera)	NHMSYS0001387317	Mike Prince
20/06/2023	Shotesham--Tendaba	TM244994	<b>Splayed Deerfly</b>	<i>Chrysops caecutiens</i>	female	insect - true fly (Diptera)	NBNSYS0000007867	Mike Prince
20/06/2023	Shotesham--Tendaba	TM244994	<b>Pied Shieldbug</b>	<i>Tritomegas bicolor</i>	immature	insect - true bug (Hemiptera)	NHMSYS0020309919	Mike Prince
20/06/2023	Shotesham--Tendaba	TM244994	<b>Lime</b>	<i>Tilia platyphyllos x cordata = T. x europaea</i>		flowering plant	NHMSYS0001754450	Mike Prince
20/06/2023	Shotesham--Tendaba	TM244994	<b>Great Pond Snail</b>	<i>Lymnaea stagnalis</i>		mollusc	NHMSYS0021056362	Mike Prince
20/06/2023	Shotesham--Tendaba	TM2499	<b>Wren</b>	<i>Troglodytes sternalis</i>		bird	NHMSYS0000530671	Mike Prince
21/06/2023	Shotesham--Tendaba	TM244994	<b>Willow Beauty</b>	<i>Peribatodes rhomboidaria</i>		insect - moth	NHMSYS0021144226	Mike Prince
21/06/2023	Shotesham--Shotesham Common	TM2499	<b>Three-spined Stickleback</b>	<i>Gasterosteus aculeatus</i>		bony fish (Actinopterygii)	NBNSYS0000188612	Mike Prince
21/06/2023	Shotesham--Shotesham Common	TM2499	<b>Large Skipper</b>	<i>Ochlodes sylvanus</i>		insect - butterfly	NHMSYS0020755521	Mike Prince
21/06/2023	Shotesham--Shotesham Common	TM2499	<b>Roesel's Bush-cricket</b>	<i>Roeseliana roeselii</i>		insect - orthopteran	NHMSYS0021351693	Mike Prince
21/06/2023	Shotesham--Shotesham Common	TM2499		<i>Lecanora muralis</i>		lichen	NHMSYS0001494846	Mike Prince
27/07/2023	Shotesham--Shotesham Common	TM2499	<b>Jelly Ear</b>	<i>Auricularia auricula-judae</i>		fungus	NHMSYS0001475388	Mike Prince
27/07/2023	Shotesham--Shotesham Common	TM2499	<b>Smooth Newt</b>	<i>Lissotriton vulgaris</i>		amphibian	NHMSYS0020194827	Mike Prince
27/07/2023	Mousehold Heath	TG240105	<b>Common Lizard</b>	<i>Zootoca vivipara</i>		reptile	NHMSYS0001706186	Mike Prince
27/07/2023	Shotesham--Shotesham Common	TM2499	<b>European Rabbit</b>	<i>Oryctolagus cuniculus</i>		terrestrial mammal	NHMSYS0000080219	Mike Prince
27/07/2023	Strumpshaw Fen RSPB	TG339063	<b>Brown Centipede</b>	<i>Lithobius (Lithobius) forficatus</i>		centipede	NHMSYS0020500668	Mike Prince

# Data Flow: iRecord Verification



**197 records submitted across 27 different taxa groups**

29% moths, 26% plants, 9% flies, 36% other

**33% verified by following day**

80% of which vascular plants

**64% verified within 7.5 months**

86% of which plants and moths

36% of all records unverified

**Ignoring plants and moths, just 20% of records verified**

Taxa Group	Days to Verify																Total			
	1	2	6	8	13	23	30	43	68	93	154	173	174	179	188	>213		>232		
bird																		15	15	
bony fish (Actinopterygii)																		1	1	
crustacean																	1	1	2	
flowering plant	51	1																	52	
insect - beetle (Coleoptera)	1									1							10	3	15	
insect - butterfly															1			2	3	
insect - dragonfly (Odonata)	1	1																	2	
insect - earwig (Dermaptera)																		1	1	
insect - hymenopteran	1							1									1	6	9	
insect - moth		3									1	49	2	1		1		57		
insect - orthopteran																		1	1	
insect - true bug (Hemiptera)	1	1																4	6	
insect - true fly (Diptera)	3			1	1												6	7	18	
lichen																			1	1
millipede																		1	1	
mollusc									1										1	
moss																			2	2
insect - caddis fly (Trichoptera)							1												1	
fungus																		1	1	
chromist																		1	1	
stonewort	1																		1	
amphibian																		1	1	
reptile																		1	1	
terrestrial mammal			1																1	
centipede										1									1	
insect - mayfly (Ephemeroptera)																		1	1	
insect - snakefly (Raphidioptera)																		1	1	
<b>Total</b>	<b>59</b>	<b>6</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>49</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>25</b>	<b>45</b>	<b>197</b>	

# Data Flow: iRecord to NBN Atlas



**34% reached NBN Atlas within 7.5 months**

91% flowering plants

**Ignoring plants, 9% of records reached NBN after 7.5 months**

**8 unverified records on Atlas**

amphibians, reptiles, some insect groups

**17% of verified records not on Atlas 6 months after verification**

molluscs, odonata, moths, some other insect groups

Taxa Group	Days to NBN Atlas							Total
	46	63	65	111	191	210	>213	
bird							15	15
bony fish (Actinopterygii)							1	1
crustacean							1	2
flowering plant		1	49				2	52
insect - beetle (Coleoptera)	2						9	15
insect - butterfly							3	3
insect - dragonfly (Odonata)					1	1		2
insect - earwig (Dermaptera)							1	1
insect - hymenopteran			2				1	9
insect - moth							5	57
insect - orthopteran							1	1
insect - true bug (Hemiptera)			1	1			2	6
insect - true fly (Diptera)	2		1				7	18
lichen							1	1
millipede							1	1
mollusc							1	1
moss							2	2
insect - caddis fly (Trichoptera)			1					1
fungus							1	1
chromist							1	1
stonewort	1							1
amphibian	1							1
reptile	1							1
terrestrial mammal	1							1
centipede							1	1
insect - mayfly (Ephemeroptera)							1	1
insect - snakefly (Raphidioptera)							1	1
<b>Total</b>	<b>8</b>	<b>1</b>	<b>54</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>30</b>	<b>197</b>

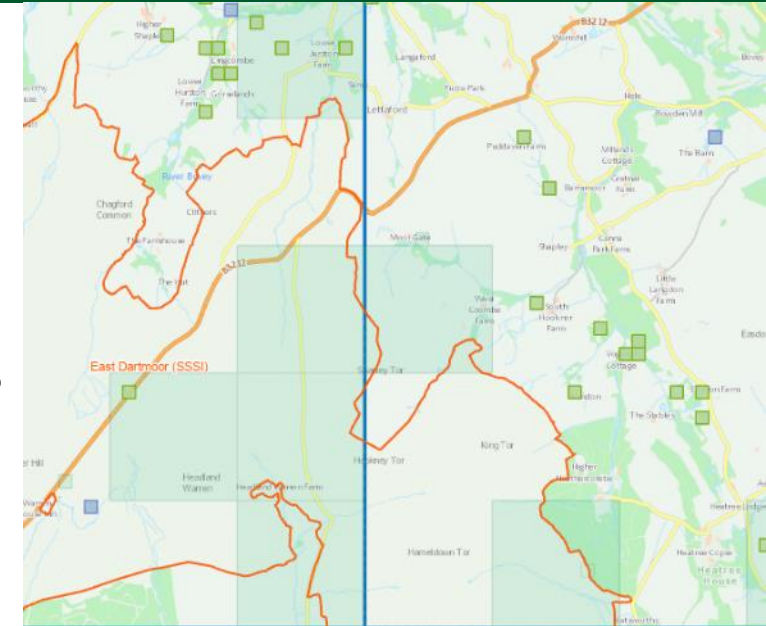
*The NBN Atlas is the first place to go to access biological records, and acts as a signpost to where more detailed data may be obtained if required*

- Encourage data providers to mobilise records to the NBN Atlas:
  - Implement NBN Atlas Access Controls
  - Enhance NBN Atlas Data Provider and Dataset Pages
  - Introduce Consistency in Verification across Data Sources
  - Improve Handling of Unverified Records
  - Address Data Quality Issues with Current NBN Atlas Records
  - Mobilise Biological Record Datasets on a Regular Basis



# NBN Atlas Access Controls

- Data providers can share high-resolution species data on the NBN Atlas
- Public view specified at a lower resolution, e.g. 2km
- Permission from data provider would be needed to access the high-resolution data, e.g. having granted an appropriate licence



## Bristol Regional Environmental Records Centre

Acronym: BRERC

### Resources

#### 1. BRERC Notable Species records within the last 10 years

BRERC Notable Species records from within the last 10 years at 1km resolution, excluding sensitive records and those without NHM Taxon Version Keys (species name code).

#### 2. BRERC species records from all years at full resolution excluding Notable Species within the last 10 years

Species records at full resolution as held at BRERC excluding; Notable Species within the last 10 years, sensitive records, and those without NHM Taxon Version Keys (species name code)

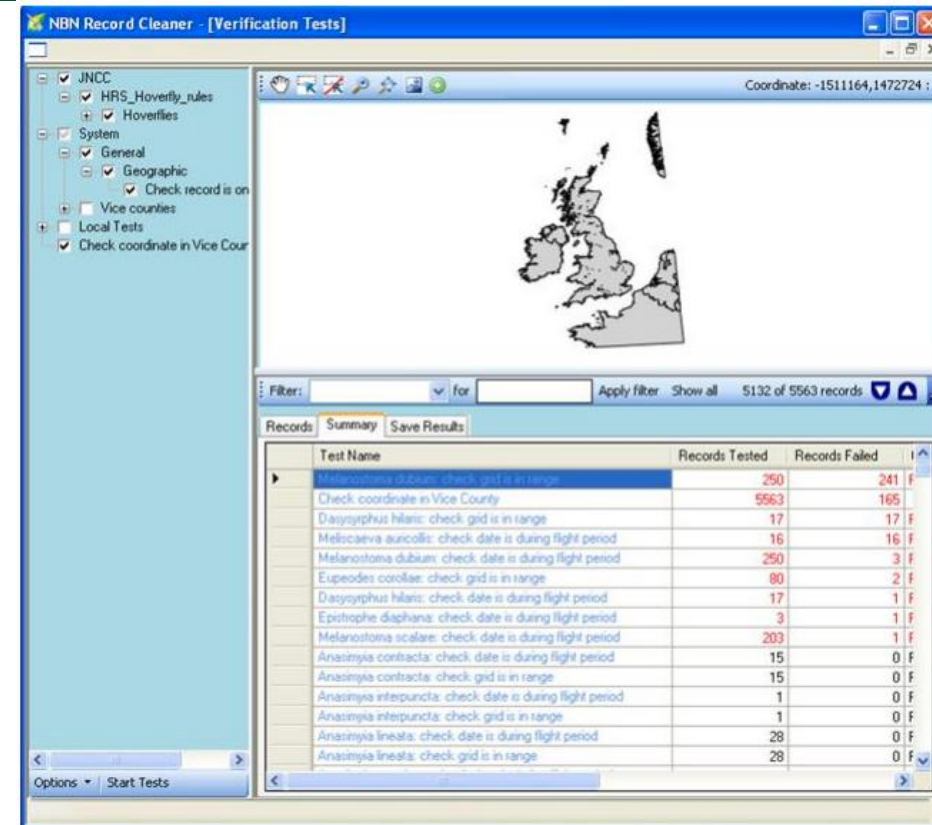


3,886,613 records

# NBN Record Cleaner

Windows tool to clean data before import

- Validation, e.g.
  - Date formats, date in future
  - Spatial references: invalid grid reference, latitude/longitude out of range
- Verification, e.g.
  - Unexpected seasonality: Orange-tip Butterfly in August
  - Identification difficulty: “Needs microscope to ID”
- Same rules are implemented in Indicia

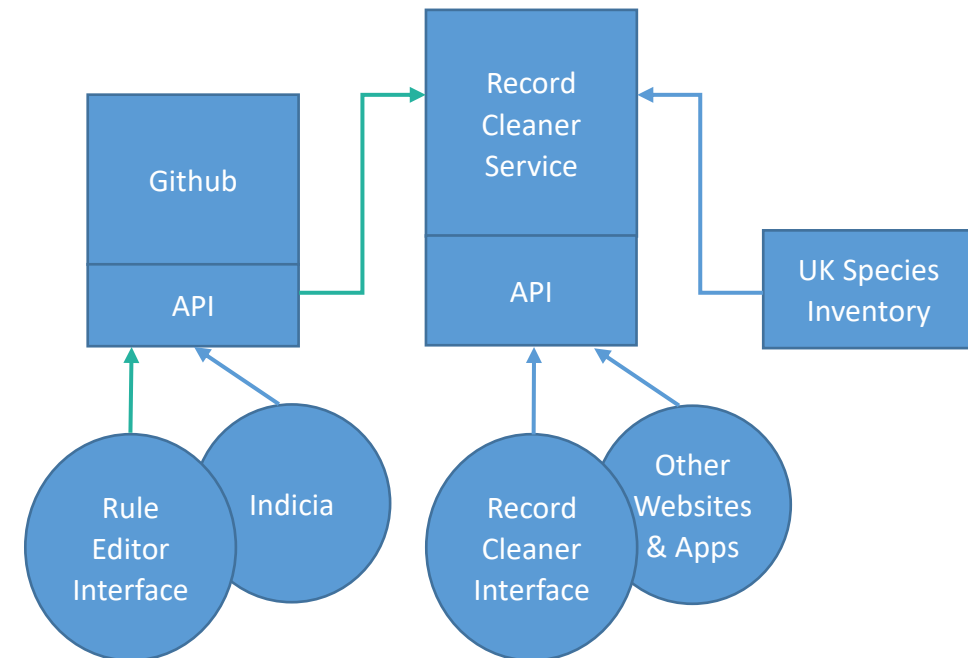


**Widely used but software is outdated: doesn't work well on modern operating systems**

**Rulesets used of varying quality: not as well-maintained as they could be**

# New Web-based Record Cleaner

- Openly available web service to “check” records from any data source
- Additional rules functionality:
  - Clearer rule definition for “rare species”: current rules focus on identification difficulty
  - UKSI Organism Key as well as Taxon Version Key, to minimise the need for updates when taxonomy changes
  - Rules for life stages: current rules are applied to all records of a species, regardless of whether it is an adult or larva for example
  - Rules continue to be maintained on Github, with new rule editor interface, e.g. to allow visual editing of distributions on a map
- Liaison with Recording Schemes

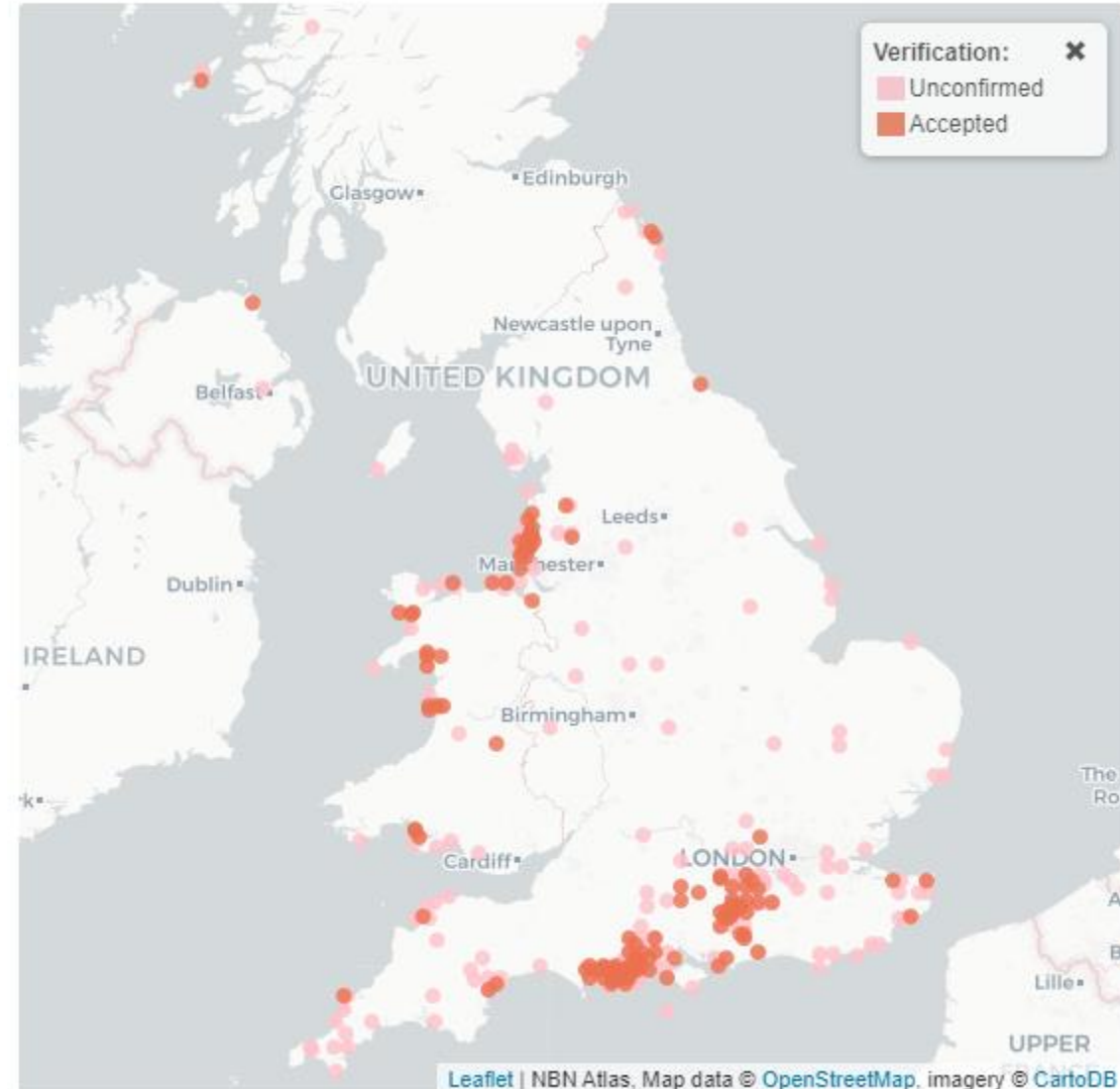


- Aid verification consistency through a common set of rules, maintained by recording schemes, to be used by anyone, e.g.
  - eDNA project deriving species data from DNA analysis of specimens, to highlight rare species but also records that may be based on errors within barcode reference libraries
  - Recording app for a citizen science project when a user is entering a sighting, to prompt for details for a potentially unusual (or erroneous) record
- Rules easily maintainable and therefore easy to keep up to date to incorporate recent knowledge, further leading to benefits such as early identification of distribution and temporal expansions, invasive species etc.
- Use of more thorough rules and/or automated rules, would reduce verifier workload and increase the speed of data flow

# Unverified Records

- Consider options for sharing unverified records direct to NBN Atlas
  - Invasive non-native species (INNS) where prompt data sharing can be critical
  - Also records of taxa that are not currently covered by a recording scheme
- But, potentially, ALL unverified records
  - Arguments against this are, in part, due to how they are currently displayed on the Atlas, and the risk of verification status being missed/ignored in analyses
  - Would displaying only verified records by default alleviate this?

50,914 records (51,151 in total)





NBN Atlas collates data from many sources, which have varying levels of verification applied



iRecord has established verification processes with expert verifiers

- Could we combine these points? E.g. provide a tool that would allow National Recording Scheme verifiers to:
  - “pull” selected records/datasets from Atlas to iRecord for verification
  - “push” the verification result back
- Improve Atlas annotation handling, to mark annotated records as “unverified”?

# Other Indicia/iRecord Work

- Additional data management within Indicia
  - Large-scale editing of records, e.g. corrections to multiple grid refs or dates following uploads of large datasets
- Enhance sensitive species handling
  - Improve consistency with NBN Atlas sensitive species lists
  - Respect recording scheme requirements
  - More formal data sharing for access to sensitive data
- Better links between national and local recording and monitoring projects
  - Enhanced “activities” to collect and analyse local data while linking to national methodologies and approaches
  - Activity homepage, blog, etc.

## Species List: [Natural England - Sensitive Species England](#)

Scientific Name (matched) ▾	Image	Author (matched) ▾	Common Name (matched) ▾	threat/risk
<a href="#">Drepanocladus turgescens</a>		(T.Jensen) Broth.	Large Yellow Feather-Moss	Desirability-the species is threatened by collection
<a href="#">Lutra lutra</a>		(Linnaeus, 1758)	Eurasian Otter	Destruction/damage to natal holts, killing of individuals
<a href="#">Peponocephala electra</a>		(Gray, 1846)	Melon-headed Whale	Disturbance
<a href="#">Cephalanthera rubra</a>		(L.) Rich.	Red Helleborine	Desirability-the species is threatened by collection



### Action on Climate in Teignbridge

For records submitted by ACT's Wildlife Wardens within Teignbridge  
Non-member

[Explore activity records](#)

[Activity summary](#)

[Incoming records chart](#)



### Addingham Wildlife

Recording the wildlife of Addingham parish.  
Non-member

### Adur River Recovery

Adur River Recovery is developing a blueprint for

[Explore activity data](#)

# By 2025...?

What evidence do we have to assess progress towards the statutory environment targets?

*“we have the most extensive and highest quality biodiversity evidence base in the world”*

- John Holmes, November 2025

1,000,000,000  
Occurrences

75,246  
Species

10,067  
Datasets

522  
Data partners

What is our progress towards halting the decline in species populations by 2030?

*“our evidence shows that we are ahead of our targets to both halt and reverse the decline...”*

- John Holmes, November 2025

